1. REPORT DATE **01 APR 2014**	2. REPORT TYPE **N/A**	3. DATES COVERED **-**	
4. TITLE AND SUBTITLE **Adult Attachment Style, Hardiness, and Mood**		5a. CONTRACT NUMBER	
		5b. GRANT NUMBER	
		5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) **Escolas S. M., Escolas H. D., Bartone P. T.,**		5d. PROJECT NUMBER	
		5e. TASK NUMBER	
		5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **US Army Institute of Surgical Research, JBSA Fort Sam Houston, Texas**		8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)		10. SPONSOR/MONITOR'S ACRONYM(S)	
		11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT **Approved for public release, distribution unlimited**			
13. SUPPLEMENTARY NOTES			
14. ABSTRACT			
15. SUBJECT TERMS			

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT **UU**	18. NUMBER OF PAGES **10**	19a. NAME OF RESPONSIBLE PERSON
a. REPORT **unclassified**	b. ABSTRACT **unclassified**	c. THIS PAGE **unclassified**			

Routledge
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Adult Attachment Style, Hardiness, and Mood

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This study examines the relationship of attachment style and hardiness to positive mood in active duty military personnel with recent deployment experiences (N = 561). Soldiers high in hardiness show more secure attachments, and less attachment-related anxiety and avoidance. Controlling for age and sex, hierarchical regressions found that hardiness and (low) attachment-related avoidance predict positive mood states. Further, the hardiness facets of commitment and control, but not challenge, predict positive mood. These results suggest that more secure attachment style and psychological hardiness serve as resilience resources for soldiers, leading to more positive mood states and well-being despite the stressors of military life.

Keywords: Adult Attachment, Dispositional Resilience, Hardiness, Military

Both attachment style and hardiness have been identified in previous studies as predictors of mental health in genuine, real-life stress situations (Neria et al., 2001). According to attachment theory, attachment style is a stable personality feature that helps organize a person's thoughts, feelings, and behaviors throughout life (Hamama-Raz & Solomon, 2006). Hardiness and secure attachment are beneficial to people when they are exposed to extreme stressors. According to Zakin, Solomon, and Neria (2003), hardiness and attachment are qualities shaped in the early years of life and are relatively stable through adulthood. Secure individuals have reported better perceptions of their mental health than insecure persons (Brennan, Shaver, & Tobey, 1991; Hazan & Shaver, 1987; Kobak & Sceery, 1988; Mikulincer & Florian, 1995; Solomon, Ginzburg, Mikulincer, Neria, & Ohry, 1998; Wagner & Tangney, 1991). Attachment style and hardiness have been shown to both independently contribute to mental health outcomes (Neria et al., 2001). It is therefore theorized that these factors will be positive predictors of mood, which is an important influence on psychological well-being (Diener, Suh, Lucas, & Smith, 1999).

Individuals with a secure attachment style have been found to differ in their hardiness levels as compared to persons with an insecure attachment style. Secure attachment style is positively associated with overall hardiness, commitment, and control, while avoidant and ambivalent attachment styles are negatively associated with these qualities (Neria et al., 2001).

The goal of the current study is to examine the relationship between adult attachment and hardiness to determine whether these two elements have an influence on mood. Many factors are known to have an influence on subjective well-being, such as financial, job, marital, and health status. At the same time, moods and emotions also contribute importantly to overall well-being (Diener et al., 1999; Yardley & Rice, 1991). As previous literature suggests, it is expected that secure attachment will be associated with higher levels of overall hardiness, and its components, commitment, control, and challenge, and that secure persons will also show more positive mood states. The insecure attachment styles of fearful and preoccupied or dismissing will be associated with lower levels of hardiness and more negative mood states. It is also hypothesized that high levels of attachment-related anxiety and attachment-related avoidance will be related to lower levels of total hardiness as well as the hardiness facets.

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ATTACHMENT THEORY

Attachment, according to Bowlby (1969), is a "lasting psychological connectedness between human beings" (p. 194). Attachment develops between the infant and caregiver through the responsiveness of the caregiver. Infants, according to Bowlby (1973), are programmed with instinctive behaviors that facilitate the development of attachment; the attachment style that develops is said to determine how infants feel about themselves and others. Thus, according to Bowlby (1969, 1973), attachment with the primary caregiver results in the development of lasting, internal working models of self and others.

Ainsworth, working independently of Bowlby, developed a laboratory procedure known as the "strange situation" scenario (Ainsworth & Wittig, 1969). By studying how individual children reacted to the same situation, Ainsworth was able to discern three different styles of infant attachment: Secure, or Group B; Insecure-Ambivalent, also called Insecure-Resistant, or Group C; and Insecure-Avoidant, or Group A (Ainsworth, Blehar, Waters, & Wall, 1978; Waters, 2002). A fourth infant attachment category was later identified by Main and Solomon (1986) which they called Insecure-Disorganized/Disoriented. Children classified into this attachment category may appear confused and dazed in the presence of the caregiver.

Hazan and Shaver (1987) proposed a theory of adult attachment based on the similarities found between parent-infant attachment and adult pair bonding. The adult attachment styles of secure, avoidant, and anxious/ambivalent as described by Hazan and Shaver (1987) build on Ainsworth's infant attachment categories. A dismissing/avoidant attachment style was added to the theory by Bartholomew and Horowitz (1991), resulting in four attachment styles labeled secure, fearful, preoccupied, and dismissing.

According to Bowlby (1973), a person's personal attachment style develops in infancy and can be secure or insecure, depending critically on the attentions of his or her primary caregiver. Attachment style presumably stays with a person for life and affects one's capacity for bonding and interaction with others. Although the general tendency is for stability in attachment style over time, research demonstrates that significant change can still occur (Atwool, 2006). For example, Main, Hesse, and Kaplan (2005) indicate that, through therapy, adults may be able to shift an insecure attachment style to a more secure one.

HARDINESS

The concept of hardiness is based heavily on existential theory (Bartone, Barry, & Armstrong, 2009). Existentialists hold to the belief that humans search for meaning in life through the decision-making process (Maddi, 2004). "Hardiness is a constellation of attitudes, beliefs, and behavioral tendencies that consist of three components: commitment, challenge, and control" (Lambert & Lambert, 1999, p. 11). *Commitment* is a feeling of purpose that is expressed by delving into life's events rather than being passive and uninvolved. *Challenge* is viewing changes in life as providing an opportunity to grow and learn rather than experience a threat to one's feeling of security. *Control* is the belief that you affect the outcomes of life rather than feeling controlled by adversity (Lambert & Lambert, 1999).

Hardiness is a factor that helps people cope with life's situations, particularly those situations that are related to stress. It has been shown to protect against the negative effects of stress that may impact on a person's health and performance (Bartone et al., 2009). Hardiness is thought to be relatively stable over a person's lifetime but is also open to change based on life experiences and knowledge (Escolas, Pitts, Safer, & Bartone, 2013). Hardiness and its three components are viewed as the core qualities that influence individual resilience under stress or major life changes (Escolas et al., 2013).

People high in hardiness have a positive sense of self, a strong commitment to work, and a greater feeling of control; and they are open-minded to change and challenges in life (Eid, Johnsen, Bartone, & Nissestad, 2008). For persons in the military and other high-stress occupations, hardiness may be an especially valuable resilience resource. A study by Eid and associates (2008) found that personality hardiness is associated with increased transformational and transactional leadership, while negatively related to passive-avoidant leadership. They conclude that personality hardiness increases one's developmental readiness and potential to grow and adapt as an effective leader (Eid et al., 2008).

It appears that hardiness is to some degree trainable, making it a valuable asset for military leaders and those in the process of becoming leaders (Bartone & Hystad, 2010). Hardiness has proven to be a significant moderator of the stress that marks wartime conditions for soldiers (Bartone, 1999; Bartone, Ursano, Wright, & Ingraham, 1989). It has also been identified as beneficial for those coping with stressors during combat training (Florian, Mikulincer, & Taubman, 1995; Westman, 1990).

While many factors can influence resilient responses to stress, including organizational and contextual ones (e.g., social support), hardiness and its facets are seen as core individual qualities that affect resilience (Bartone et al., 2009; Maddi, 2007). Thus, recent research has described individuals high in hardiness as "stress resistant, committed to what they are doing, confident that they can influence their surroundings and outcomes, and able to regard major life events and transformations as challenges to be mastered rather than threats to be. . . endured" (Mikulincer & Shaver, 2007, p. 460). Hardy individuals report better physical health (Bartone et al., 1989) and mental health outcomes (Bartone, 1999; Pietrzak, Johnson, Goldstein, Malley, &

Southwick, 2009). Thus, hardiness is sometimes referred to as "dispositional resilience" reflecting a generalized tendency to display resilient responses to a range of stressors (Bartone, 2006, 2007).

MOOD

According to Johnston, Guadron, Verchot, and Gueldner (2011), mood is defined as a relatively long-lasting emotional state and reflects the status of a person's health. A person's mood is viewed as having either positive or negative valence and is often expressed as being in a "good mood" or a "bad mood" (Thayer, 2001). Mood is an internal, subjective state with potential for long-term disturbances, such as depression, and can often be inferred from posture, behavior, or other body language. Positive mood states contribute to the subjective sense of well-being, even when controlling for previous levels of well-being (Yardley & Rice, 1991). Conversely, negative mood states and mood disturbances contribute to a decreased sense of well-being (Johnston et al., 2011).

The present study seeks first of all to evaluate the relationship between adult attachment and hardiness in a military sample. In line with earlier studies, we predict that secure attachment will be associated with higher levels of hardiness and its facets. We also expect that persons with a secure attachment style will show more positive mood states. In contrast, the insecure attachment styles of fearful, preoccupied, and dismissing are predicted to be linked to lower hardiness and more negative mood states. Finally, high levels of attachment-related anxiety and attachment-related avoidance will be related to lower levels of total hardiness as well as the hardiness facets.

METHOD

Data for this study were collected from military personnel recruited at various locations and dates at Fort Sam Houston and Lackland Air Force Base, as part of a quantitative, cross-sectional study looking at attachment, temperament, and hardiness as protective factors for post-traumatic stress.

Participants

To participate in this study, participants must have been deployed for at least 30 days or more during their military career, be age 18 years or older, and currently be on active duty. Of the 561 total respondents, 72% were male and 28% were female. The ages of the respondents were 25 years and younger, 8%; 26 to 30, 23%; 31 to 40, 49%; and 41 years and older, 21%. A total of 69% of participants reported being married or living with a partner. Regarding education, 44% of the sample reported having had some

TABLE 1
Sample Demographics

Demographics	N	Valid%
Rank		
Junior enlisted personnel	754	57.6
Noncommissioned officers	448	34.3
Officer/warrant officer	106	8.1
Years in the military		
1 or less	176	13.4
2	157	12
3–4	436	33.3
5–9	307	23.5
10+	235	17.8
Age (years)		
18–19	37	2.8
20–24	571	43.5
25–29	368	28
30–39	274	20.9
40 or older	64	4.9
Gender		
Male	1167	89.5
Female	137	10.5
Education		
Some high school	6	0.5
High school diploma/GED	646	49.5
Some college/associate's degree	501	38.4
Bachelor's degree	133	10.2
Graduate degree	20	1.5
Marital status		
Single/never married	425	33.2
Married	704	54.9
Separated	72	5.6
Divorced	76	5.9
Widowed	3	0.2

college or an associate's degree, 30% had a bachelor's degree, and 22% had a master's degree or higher. Enlisted made up 65% of participants, and the remaining 35% were officers. In this sample 62% were in the Army, with another 37% from the Air Force, 1% from the Navy, and 1% from the Coast Guard. The self-reported racial identity was 66% White, 20% African American, 6% Asian/Pacific Islander, and 9% other. All participants had deployed at least once for at least 30 days, with an average of 1 year, 10.8 months ($SD = 1.47$) total time spent on deployment. Demographics are shown in Table 1.

Measures

Attachment

Adult attachment was measured two ways. The Relationship Questionnaire (Bartholomew & Horowitz, 1991) is a four-item measure that yields categorical adult attachment scores, while the Experiences in Close Relationships–Revised (Fraley, Waller, & Brennan, 2000) instrument provides continuous scores on attachment-related anxiety and attachment-related avoidance. The conceptual relationship between the categorical measure of adult attachment and

the continuous measure is that secure adults are low in attachment-related anxiety and avoidance; fearful adults are high in attachment-related avoidance and attachment-related anxiety; preoccupied adults are low in attachment-related avoidance and high in attachment-related anxiety; and dismissing adults are high in attachment-related avoidance and low in attachment-related anxiety. (For more information about the theoretical relationship between these two self-report measures of adult attachment see Self-Report Measures of Adult Attachment by Shaver and Fraley, 1997, updated December 2010).

The Relationship Questionnaire (RQ; Bartholomew & Horowitz, 1991) is a self-report measure of adult attachment. It consists of a series of four statements each to represent secure, preoccupied, fearful, and dismissing adult attachment styles. Respondents are instructed to place a checkmark next to the letter corresponding to the style that best describes them or is closest to the way they are. Next, respondents rate each of these relationship styles to indicate how well each description corresponds to their general relationship style, on a Likert scale from *disagree strongly* to *agree strongly*. Test-retest reliabilities of the RQ subscales ranged from .49 to .71, as reported by Scharfe & Bartholomew (1994). David Schmitt and colleagues (2004) validated the attachment questionnaire in 62 cultures, suggesting that people worldwide fall into one of the four attachment patterns. These authors also identified cultural differences that suggest societal norms influence attachment patterns.

The Experiences in Close Relationships–Revised (ECR-R; Fraley et al., 2000) is a 36-item instrument designed to measure only attachment-related anxiety and attachment-related avoidance. Participants are asked to think about their close relationships, without focusing on a specific partner, and rate the extent to which each item accurately describe their feelings in close relationships, using a 7-point scale ranging from *not at all* (1) to *very much* (7). The ECR-R included 18 items that tap attachment -related anxiety and 18 items that tap attachment-related avoidance. Internal consistency reliability tends to be .90 or higher for the two ECR-R scales (Fraley et al., 2000).

Hardiness

The Dispositional Resiliency Scale-15 (DRS-15; Bartone, 2007) contains 15 statements that address total hardiness and the three hardiness subcomponents of commitment, control, and challenge. Participants are instructed to rate statements about life that people often feel differently about and to check a box to show how much they think each one is true for them. The statements are rated on a 4-point scale (0 to 3) from *not at all true* to *completely true*. Statements include items such as "I feel that my life is somewhat empty of meaning" (commitment); "How things go in my life depends on my own actions" (control); and "I

enjoy the challenge when I have to do more than one thing at a time" (challenge). The sum score for all 15 items is the overall hardiness score, and each of the components has five items. Cronbach's alpha coefficient was .78 for the full 15-item measure.

Mood

The mood quality subscale of the Dimensions of Temperament Survey–Revised (DOTS-R; Windle & Lerner, 1986) provides a measure of mood. Seven items, such as, "I laugh and smile at a lot of things" and "I do not laugh or smile at many things" are combined to create the mood quality subscale. Participants rate each item on a 4-point Likert scale, from *usually false* to *usually true*. Some items are reverse coded in creating the mood quality variable, such that higher scores indicate a more positive mood. Windle and Lerner (1986) reported internal consistency coefficients (Cronbach's alpha) of .89 for a sample of 300 young adults.

Procedure

Anonymous questionnaires were distributed to military personnel at Fort Sam Houston and Lackland Air Force Base in San Antonio, Texas, from summer 2010 to summer 2011. Volunteers were recruited in a variety of settings, such as classrooms, outside the post exchange, or in hallways, in which there was one box with blank questionnaires with envelopes and a separate box for returning the completed questionnaire in the sealed envelope. The study was reviewed by the Brooke Army Medical Center's Institutional Review Board and received an exempt research status based on the entirely anonymous nature of the questionnaires.

Data Analysis

Data analysis was conducted using SPSS statistics version 19 (SPSS, Inc., Chicago, IL). Descriptive statistics were first computed to determine sample characteristics. Analysis of variance (ANOVA) was used to assess if the different attachment groups (secure, fearful, preoccupied, and dismissing) differed in their total hardiness and facet scores. Group differences were determined by means of least significant difference (LSD) tests. Standard multiple regressions were used to assess the relationship of attachment-related anxiety and attachment-related avoidance to total hardiness and its facets. Four separate regressions tested the effects of attachment style first on total hardiness and then on each of the three facets. Associations among attachment styles, total hardiness, the hardiness facets and well-being were first assessed using bivariate Pearson correlations. Finally, standard multiple regression was used to assess the potential effects of hardiness (total and facets),

attachment-related anxiety, and attachment-related avoidance on well-being as indexed by mood.

Results

Of our total sample population, 39% showed a secure attachment style, 24% fearful, 7% preoccupied, and 30% dismissing on the RQ. This distribution is consistent with results found in previous studies (Brennan et al., 1991; Escolas, 1995; Schwartz, Waldo, & Higgins, 2004). The overall sample showed a total hardiness mean of 28.69 with a standard deviation of 6.16. The components of hardiness have the following means and standard deviations: commitment, $M = 9.75$, $SD = 2.72$; control, $M = 11.30$, $SD = 2.61$; and challenge, $M = 7.63$, $SD = 2.81$.

An ANOVA using the RQ as the independent variable and hardiness as the dependent variable yielded significant findings for attachment style and hardiness, F (3, 505) $= 14.08$, p $< .001$. The means and standard deviations for hardiness within the different attachment style groups (using the RQ measure) were as follows: secure style ($M = 30.62$, $SD = 5.92$); fearful style ($M = 26.38$, $SD = 5.51$); preoccupied style ($M = 28.36$, $SD = 5.45$); dismissing style ($M = 28.13$, $SD = 6.16$). LSD tests indicated that the secure attachment group reported significantly higher levels of total hardiness than the three insecure attachment styles; fearful ($p < .001$), preoccupied ($p = .034$), and dismissing ($p < .001$). Fearful attachment style showed significantly lower hardiness levels as compared to the dismissing style ($p = .014$). Fearful has no significant difference from preoccupied. The comparison of dismissing and preoccupied styles on total hardiness was not significant. Results are shown in Figure 1.

Individual ANOVAs were next computed for each of the hardiness facets, commitment, control, and challenge, with respect to attachment style. The secure attachment group shows the highest commitment level with the following mean and standard deviation: $M = 10.56$, $SD = 2.47$.
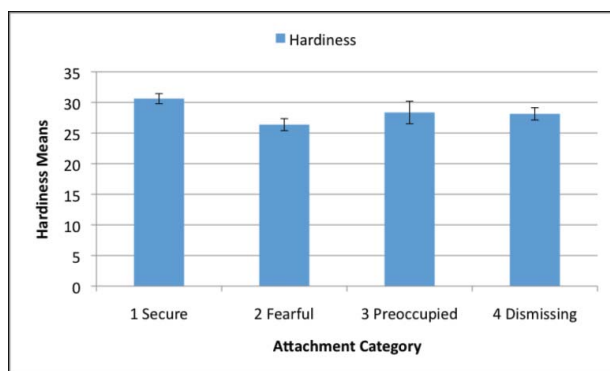
The other adult attachment style means and standard deviations are as follows: fearful, $M = 8.69$, $SD = 2.82$; preoccupied, $M = 9.83$, $SD = 2.46$; and dismissing, $M = 9.56$, $SD = 2.58$. There is a significant difference in commitment between secure and fearful ($p < .001$), and secure versus dismissing ($p < .001$). There was no significant difference between secure and preoccupied in terms of commitment. When compared to the other three attachment styles, the fearful attachment style group shows the lowest levels of commitment.

For hardiness control, the secure attachment style group shows the highest level ($M = 11.96$, $SD = 2.42$), followed by dismissing ($M = 11.17$, $SD = 2.59$), fearful ($M = 10.73$, $SD = 2.4$), and preoccupied ($M = 10.67$, $SD = 2.75$). People with secure attachment style showed significantly higher levels of control than fearful ($p < .001$), preoccupied ($p < .01$), and dismissing ($p < .01$). The three insecure attachment style groups did not differ significantly from one another in hardiness control.

Individuals with secure attachment style also report the highest levels of challenge ($M = 8.1$, $SD = 2.85$), followed by preoccupied ($M = 7.87$, $SD = 2.38$), dismissing ($M = 7.41$, $SD = 2.96$), and fearful ($M = 6.96$, $SD = 2.61$). The secure attachment style group is significantly higher in challenge than the fearful ($p < .001$) and dismissing ($p < .05$) groups. There was no significant difference in the challenge component between secure and preoccupied. Results for these analyses are shown in Figure 2.

A series of standard multiple regressions analyzed the relationship of attachment-related anxiety and attachment-related avoidance to total hardiness, followed by the hardiness facets (commitment, control, and challenge). In the first regression, both attachment-related anxiety and avoidance were significant negative predictors of hardiness (overall $F = 60.49$, $p < .001$; $R^2 = .18$, $p < .001$). The same pattern of results emerged for the individual facets of hardiness commitment (overall $F = 55.44$, $p < .001$; $R^2 = .17$, $p < .001$) and hardiness control ($F = 45.47$, $p < .001$; $R^2 = .14$, $p < .001$). For hardiness challenge, attachment-related avoidance was a significant predictor,

FIGURE 1   Total hardiness by adult attachment style. *Note*. Secure = 30.62; Fearful = 26.30; Preoccupied = 28.36; Dismissing = 28.13. Overall F (3, 505) = 14.08, $p < .001$. Significant contrast by the LSD test: 1 versus 2, $p < .001$; 1 versus 3, $p < .05$; 1 versus 4, $p < .001$; 2 versus 3, n.s.; 2 versus 4, $p < .01$; 3 versus 4, n.s. (color figure available online).
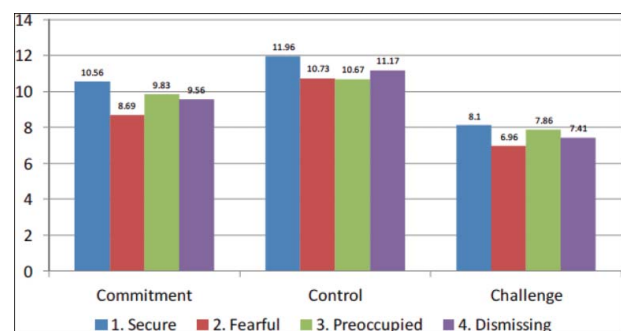

FIGURE 2   Components of total hardiness in relation to adult attachment style. *Note*. For significant contrasts by LSD test, see Table 3 (color figure available online).

TABLE 2
Standard Regression Results Predicting Four Hardiness Variables With Attachment-Related Anxiety and Avoidance

Predictor	Model 1 Total hardiness		Model 2 Commitment		Model 3 Control		Model 4 Challenge	
	B [SE]	β	B [SE]	β	B [SE]	β	B [SE]	β
Attachment anxiety	−.90 [.25]	−.18***	−.25 [.11]	−.11*	−.50 [.11]	−.23***	−.15 [.12]	−.07
Attachment avoidance	−1.58 [.26]	−.29***	−.79 [.12]	−.33***	−.44 [.11]	−.19***	−.35 [.13]	−.15**
Constant	35.64 [.68]		12.66 [.30]		13.92 [.29]		9.06 [.33]	
R^2	.18***		.17***		.14***		.03***	
F (df)	60.49 (2,543)***		55.44 (2,543)***		45.47 (2,543)***		10.42 (2,543)***	

Note. B = unstandardized coefficient; [SE] = standard error; β = standardized coefficient.
*$p < .05$; **$p < .01$; ***$p < .001$.

TABLE 3
Significant contrasts by LSD test of mean values portrayed in
Figure 2

Commitment	Control	Challenge
1 vs 2 p < .001	1 vs 2 p < .001	1 vs 2 p < .001
1 vs 3 ns	1 vs 3 p < .01	1 vs 3 ns
1 vs 4 p < .001	1 vs 4 p < .01	1 vs 4 p < .05
2 vs 3 p < .001	1 vs 4 p < .01	1 vs 4 p < .05
2 vs 4 p < .001	2 vs 4 ns	

Note. ns = not significant

but anxiety was not significant (overall $F = 10.42$, $p < .001$; $R^2 = .03$, $p < .001$. Findings thus show that attachment-related anxiety is a significant predictor of total hardiness, commitment, and control, but is not significantly related to the challenge component. Attachment-related avoidance was found to be a significant predictor of total hardiness and all three components. These results are summarized in Table 2.

Our results indicate there is a relationship between self-reported adult attachment and hardiness, whether one uses a categorical or continuous measure of adult attachment. For the remaining analyses, we used the continuous measure of adult attachment, which provides scores on attachment-related anxiety and attachment-

related avoidance. As can be seen in the correlation matrix presented in Table 4, hardiness and the hardiness facets of commitment, control, and challenge, attachment-related anxiety, attachment-related avoidance, and mood quality are all correlated with one another. Mood is most strongly associated with total hardiness and hardiness commitment ($r = .47$, $p < .001$).

Hierarchical regression analyses were conducted to examine the relationship of attachment-related anxiety, attachment-related avoidance, and hardiness to mood, while controlling for age, gender, education, and marital status. In the first model, entering just age, gender, education, and marital status as predictors, only age is significant as a (negative) predictor of mood. This indicates that older individuals experience less positive moods and well-being. In the next model, attachment-related anxiety and attachment-related are added to the predictor set. Age remains a significant predictor, and attachment-related avoidance is also significant. This indicates that as attachment-related avoidance decreases, positive mood states increase. The final model adds total hardiness scores to the predictor set. Here, age, attachment-related avoidance, and total hardiness are all significant predictors of mood. The relationship of total hardiness to mood is positive in that as total hardiness increases, mood also becomes more positive.

A final regression analysis was conducted to evaluate the contributions of the hardiness facets commitment, control,

TABLE 4
Pearson Correlations Showing Relations Among the Study Variables

Variable	AR anxiety	AR avoidance	Hardiness	Commitment	Control	Challenge	Mood
Attachment-related anxiety	1	.602**	−.355**	−.314**	−.346**	−.151**	−.273**
Attachment-related avoidance		1	−.403**	−.402**	−.331**	−.185**	−.381**
Hardiness (overall)			1	.832**	.735**	.704**	.443**
Commitment				1	.510**	.382**	.456**
Control					1	.187**	.346**
Challenge						1	.208**
Mood							1
Mean	2.79	2.78	28.68	9.75	11.3	7.63	22.29
Standard deviation	1.2	1.14	6.15	2.71	2.61	2.81	4.9

**Correlation is significant at $p < 0.01$.

TABLE 5
Summary of Hierarchical Regression Analysis for Attachment Anxiety and Avoidance, and Total Hardiness Predicting Mood ($N = 538$)

Variable	Model 1			Model 2			Model 3		
	B	SE B	β	B	SE B	β	B	SE B	β
Constant	24.89	1.40		29.59	1.36		20.03	1.83	
Age	−1.23	.26	−.23***	−1.07	.24	−.20***	−.80	.23	−.15***
Sex	.36	.46	.03	.49	.42	.05	.17	.41	.02
Education	.22	.17	.06	.12	.15	.03	.13	.15	.04
Marital status	.18	.28	.03	.16	.26	.03	.22	.25	.03
Attachment anxiety				−.29	.19	−.07	−.09	.19	−.02
Attachment avoidance				−1.45	.20	−.35***	−1.05	.20	−.25***
Total hardiness							.24	.03	.31***
F for model (df)	6.45*** (4,533)			22.48*** (6,531)			29.16*** (7,530)		
Adjusted R^2	.04			.19			.27		
F for change in R^2 (df)	6.45*** (4,533)			52.09*** (2,531)			55.41*** (1,530)		

*$p < .05$; **$p < .01$; ***$p < .001$.

and challenge to mood. We found that age, attachment-related avoidance, commitment, and control are all significant predictors of mood. Age and attachment-related avoidance continue to have a negative significant influence on mood. This negative influence of age on mood may be a reflection of increased health problems often experienced by older people. The hardiness facets of commitment and control are positively related to mood. This suggests that although total hardiness is predictive of positive mood, it is the components of commitment and control that are primarily responsible for this relationship. Results are shown in Table 5 and Table 6.

DISCUSSION

As predicted, secure attachment style is associated with higher levels of hardiness, whether measured by a categorical or continuous instrument. Higher levels of hardiness and lower levels of attachment-related avoidance and attachment-related anxiety predicted greater reported mood. It was also discovered that mood, an important contributor to well-being, is positively related to both hardiness and attachment style.

Hardiness and its three facets are viewed as the core qualities that affect a person's level of resilience when it comes to stress and/or change within their world (Escolas et al., 2013). Commitment reflects a strong sense of purpose expressed by actively delving into life's activities rather than being passive and inactive. Challenge involves perceiving changes in life as opportunities to grow and learn rather than feeling a threat to one's sense of security. Control is the belief that you can influence the outcomes of life rather than feeling helpless in the face of adversity (Lambert & Lambert, 1999).

TABLE 6
Summary of Hierarchical Regression Analysis for Attachment-Anxiety and Avoidance, and Hardiness Facets Predicting Mood ($N = 538$)

Variable	Model 1			Model 2			Model 3		
	B	SE B	β	B	SE B	β	B	SE B	β
Constant	24.82	1.40		29.59	1.36		19.51	1.84	
Age	−1.24	.26	−.23***	−1.07	.24	−.20***	−.80	.23	−.15***
Sex	.37	.46	.03	.48	.43	.05	.22	.41	.02
Education	.24	.17	.07	.12	.15	.03	.12	.15	.03
Marital status	.16	.29	.03	.16	.26	.03	.21	.25	.03
Attachment anxiety				−.30	.19	−.08	−.08	.19	−.02
Attachment avoidance				−1.44	.20	−.35***	−.95	.20	−.23***
Commitment							.48	.08	.27***
Control							.21	.08	.11**
Challenge							.02	.07	.01
F for model (df)	6.45*** (4,533)			22.48*** (6,531)			24.87*** (9,528)		
Adjusted R^2	.04			.19			.29		
F for change in R^2 (df)	6.45*** (4,533)			52.09*** (2,531)			23.83*** (3,528)		

Note. Age is categorized as 17–21 = 1; 22–25 = 2; 26–30 = 3; 31–40 = 4; 41+ = 5.
*$p < .05$; **$p < .01$; ***$p < .001$.

Secure attachment and hardiness are beneficial when people are exposed to extreme stressors. A person's attachment style and level of hardiness also may affect mood. Our findings show that a secure attachment style is positively associated with overall hardiness, commitment, challenge, and control. Further, both secure attachment style and hardiness are associated with more positive mood states, which can lead to a greater sense of well-being. Avoidant and ambivalent attachment styles are negatively associated with these variables, corresponding with the findings of Neria and colleagues (2001).

This study suggests a number of practical implications. Interventions to improve mood and well-being in military groups could include training programs to enhance hardiness attitudes and related coping skills (Bartone & Hystad, 2010). Also, therapeutic interventions to increase secure attachment style in adults have shown some success (Yearwood, Pearson, & Newland, 2012) and could be offered to military personnel. As its name implies, attachment-focused therapy is based on attachment theory. The goal is to provide individuals with a safe environment where they can develop themselves in terms of self-perception and knowledge. Developing a secure adult attachment style is possible and beneficial if one would like to be a healthier parent, create more satisfying intimate relationships, and have greater self-awareness and feelings of self-worth (Main et al., 2005).

This study has several limitations. The opportunistic recruitment strategy used in this study yielded a sample that is older and better educated than the military population as a whole. Thus, results may not be generalizable to all military members. A second limitation relates to the cross-sectional nature of the data obtained for this study. Participants answered questions regarding attachment, hardiness, and mood at the same time point, which may lead to artificially inflated correlations. Future studies should assess the impact of hardiness and attachment style on mood and other important outcome variables over time, with the outcome variables measured at later time point(s). Additional research in this area should also include other factors that may have independent or interactive effects on outcomes, such as combat exposure (Bartone, 1999; Pietrzak et al., 2009) and social support (King, King, Fairbank, Keane, & Adams, 1998).

Despite these limitations, this study sheds important new light on the relations between hardiness and attachment style, and their combined influence on positive mood and well-being. While hardiness and attachment style are clearly related, both contributed independently to positive mood. In particular, hardiness commitment and control, and attachment-related avoidance, are significant predictors of mood. Future studies should examine these variables in other samples, and explore the value of different training approaches for building hardiness and secure attachment style in military personnel.

REFERENCES

Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation.* Hillsdale, NJ: Erlbaum.

Ainsworth, M. D. S., & Wittig, B. A. (1969). Attachment and the exploratory behavior of one-year-olds in a strange situation. In B. M. Foss (Ed.), *Determinants of infant behaviour* (Vol. 4, pp. 113–136). London, UK: Methuen.

Atwool, N. (2006). Attachment and resilience: Implications for children in care. *Child Care in Practice*, *12*, 315–330.

Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of four-category model. *Journal of Personality and Social Psychology*, *61*, 226–244.

Bartone, P. T. (1999). Hardiness protects against war-related stress in Army Reserve Forces. *Consulting Psychology Journal: Practice and Research*, *51*, 71–82. doi:10.1037/1061-4087.51.2.72

Bartone, P. T. (2006). Resilience under military operational stress: can leaders influence hardiness? *Military Psychology*, *18*(S3), S131–S148. doi:10.1207/s15327876mp1803s_10

Bartone, P. T. (2007). Test-retest reliability of the Dispositional Resilience Scale-15, a brief hardiness scale. *Psychological Reports*, *101*, 943–944.

Bartone, P. T., Barry, C. L., & Armstrong, R. E. (2009, November). To build resilience: Leader influence on mental hardiness. *Defense Horizons*, *69*, 1–8. Washington, DC: National Defense University Press. Retrieved from http://www.ndu.edu/CTNSP/docUploaded/DH69.pdf

Bartone, P. T., & Hystad, S. W. (2010). Increasing mental hardiness for stress resilience in operational settings. In P. T. Bartone, B. H. Johnsen, J. Eid, J. Violanti, & J. C. Laberg (Eds.), *Enhancing human performance in security operations* (pp. 257–274). Springfield, IL: Charles C. Thomas.

Bartone, P. T., Ursano, R. J., Wright, K. M., & Ingraham, L. H. (1989). The impact of a military air disaster on the health of assistance workers. *Journal of Nervous and Mental Disease*, *177*, 317–328. doi:10.1097/00005053-198906000-00001

Bowlby, J. (1969). *Attachment and loss, Vol. 1: Attachment.* New York, NY: Basic Books.

Bowlby, J. (1973). *Attachment and loss, Vol. 2: Separation.* New York, NY: Basic Books.

Brennan, K. A., Shaver, P. R., & Tobey, A. E. (1991). Attachment styles, gender, and parental problem drinking. *Journal of Social and Personal Relationships*, *8*, 451–466.

Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, *125*, 276–302. doi:10.1037/0033-2909.125.2.276

Eid, J., Johnsen, B., Bartone, P., & Nissestad, O. (2008). Growing transformational leaders: exploring the role of personality hardiness. *Leadership and Organization Development Journal*, *29*, 4–23.

Escolas, S. (1995). *The correlates of adult attachment and temperament: A new perspective on an old debate* (unpublished doctoral dissertation, Texas Tech University, 1995).

Escolas, S., Pitts, B., Safer, M., & Bartone, P. (2013). The protective value of hardiness on military posttraumatic stress symptoms. *Military Psychology*, *25*, 116–123.

Florian, V., Mikulincer, M., & Taubman, O. (1995). Does hardiness contribute to mental health during a stressful real life situation? The role of appraisal and coping. *Journal of Personality and Social Psychology*, *68*, 687–695.

Fraley, R. C., Waller, N. G., & Brennan, K. A. (2000). An item-response theory analysis of self-report measures of adult attachment. *Journal of Personality and Social Psychology*, *78*, 350–365.

Hamama-Raz, Y., & Solomon, Z. (2006). Psychological adjustment of melanoma survivors. *Journal of Individual Differences*, *27*, 172–182.

Hazan, C., & Shaver, P. R. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology*, *52*, 511–524.

Johnston, N., Guadron, M., Verchot, C., & Gueldner, S. (2011). Validation of the well-being picture scale (WPS) as a measure of mood. *Visions: Journal of Rogerian Nursing Science*, *18*, 8–21.

King, L. A., King, D. W., Fairbank, J. A., Keane, T. M., & Adams, G. A. (1998). Resilience-recovery factors in post-traumatic stress disorder among female and male Vietnam veterans: Hardiness, postwar social support, and additional stressful life events. *Journal of Personality and Social Psychology*, *74*, 420–434. doi:10.1037/0022-3514.74.2.420.

Kobak, R. R., & Sceery, A. (1988). Attachment in late adolescence: Working models, affect regulation, and representations of self and others. *Child Development*, *59*, 135–146.

Lambert, C. E., & Lambert, V. A. (1999). Psychological hardiness: State of the science. *Holistic Nursing Practice*, *13*, 11–19.

Maddi, S. R. (2004). Hardiness: An operationalization of existential courage. *Journal of Humanistic Psychology*, *44*, 279–298. doi: 10.1177/0022167804266101

Maddi, S. R. (2007). Relevance of hardiness assessment and training to the military context. *Military Psychology, 19*, 61–70. doi: 10.1037/1061-4087.50.2.78

Main, M., Hesse, E., & Kaplan, N. (2005). Predictability of attachment behavior and representational processes at 1, 6, and 18 years of age: The Berkeley Longitudinal Study. In K. E. Grossmann, K. Grossmann, & E. Waters (Eds.), *Attachment from infancy to adulthood* (pp. 245–304). New York, NY: Guilford Press.

Main, M., & Solomon, J. (1986). Discovery of a new, insecure-disorganized/disoriented attachment pattern. In T. B. Brazelton & M. Yogman (Eds.), *Affective development in infancy* (pp. 95–124). Norwood, NJ: Ablex.

Mikulincer, M., & Florian, V. (1995). Appraisal of and coping with a real-life stressful situation: The contribution of attachment styles. *Personality and Social Psychology Bulletin*, *21*, 406–414.

Mikulincer, M., & Shaver, P. R. (2007). *Attachment in adulthood: Structure, dynamics, and change*. New York, NY: Guilford Press.

Neria, Y., Guttmann-Steinmetz, S., Koenen, K., Levinovsky, L., Zakin, G., & Dekel, R. (2001). Do attachment and hardiness relate to each other and to mental health in real-life stress? *Journal of Social and Personal Relationships*, *18*, 844–858. doi:10.1177/0265407501186006

Pietrzak, R. H., Johnson, D. C., Goldstein, M. B., Malley, J. C., & Southwick, S. M. (2009). Psychological resilience and post deployment social support protect against traumatic stress and depressive symptoms in soldiers returning from Operations Enduring Freedom and Iraqi Freedom. *Depression and Anxiety*, *26*, 745–751. doi:10.1002/da.20558

Scharfe, E., & Bartholomew, K. (1994). Reliability and stability of adult attachment patterns. *Personal Relationships*, *1*, 23–43.

Schwartz, J. P., Waldo, M., & Higgins, A. J. (2004). Attachment styles: Relationship to masculine gender role conflict in college men. *Psychology of Men and Masculinity*, *5*, 143–146.

Shaver, P., & Fraley, C. (1997). Self-report measures of adult attachment [updated December 2010]. Retrieved from http://internal.psychology.illinois.edu/~rcfraley/measures/measures.html

Solomon, Z., Ginzburg, K., Mikulincer, M., Neria, Y., & Ohry, A. (1998). Coping with war captivity: The role of attachment style. *European Journal of Personality*, *12*, 271–285.

Thayer, R. E. (2001). *Calm energy*. New York, NY: Oxford University Press.

Wagner, P. E., & Tangney, J. P. (1991). *Affective style, aspects of the self, and psychological symptoms.* Unpublished manuscript, George Mason University.

Waters, E. (2002). Comments on strange situation classification. Retrieved from http://www.johnbowlby.com

Westman, M. (1990). The relationship between stress and performance: The moderating effect of hardiness. *Human Performance*, *3*, 141–155. doi: 10.1207/s15327043hup0303_1

Windle, M., & Lerner, R. M. (1986). Reassessing the dimensions of temperamental individuality across the lifespan: The revised dimensions of temperament survey (DOTS-R). *Journal of Adolescent Research*, *1*, 213–230.

Yardley, J. K., & Rice, R. W. (1991). The relationship between mood and subjective well-being. *Social Indicators Research*, *24*, 101–111.

Yearwood, E. L., Pearson, G. S., & Newland, J. A. (Eds.). (2012). *Child and adolescent behavioral health: A resource for advanced practice psychiatric and primary care practitioners in nursing*. New York, NY: Wiley.

Zakin, G., Solomon, Z., & Neria, Y. (2003). Hardiness, attachment style, and long-term psychological distress among Israeli POWs and combat veterans. *Personality and Individual Differences*, *34*, 819–829.